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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/071,240	02/11/2002	Fei Mao	23390-000101/US	9109

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EXAMINER

CARTER, AARON W

ART UNIT PAPER NUMBER

2625

DATE MAILED: 12/10/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/071,240

Applicant(s)

MAO ET AL.

Examiner

Aaron W Carter

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 22 April 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-29 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-6, 9, 11, 15-21 and 27-29 is/are rejected.
- 7) ☒ Claim(s) 7, 8, 10, 12-14 and 22-26 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 11 February 2002 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input checked="" type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>04/2002</u> . | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Drawings***

1. The drawings filed on February 11, 2002 are objected to because of draft person's remarks (see attached PTO-948).

### ***Claim Rejections - 35 USC § 112***

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 11 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 11 recites the limitation "said initial position" in line 2. There is insufficient antecedent basis for this limitation in the claim.

### ***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1-6, 9, 15-21, 27-29 are rejected under 35 U.S.C. 102(b) as being anticipated by USPN 5,903,664 to Hartley et al. ("Hartley").

As to claim 1, Hartley discloses a method of selecting a portion of an image, the portion of the image containing a feature of interest, a view of the image being displayed on a display, the image being generated from an image-defining array containing image data corresponding to image properties at points within a coordinate system containing the image, the image-defining array being stored by an image processing system, and a user having a user interface for interacting with the image processing system (Fig. 1), the method comprising the steps of:

- (a) determining a seed point in the image defining array in response to the selection by the user of a pixel in the view of the image being displayed (column 4, lines 10-12); and
- (b) growing a region about said seed point, wherein the growth of said region is responsive to input from the user interface, such that manipulation of the user interface selectively determines the extent of the growth of said region (column 3, line 50 – column 4, line 14, wherein region growing is responsive to the ROI, seed point and threshold input from the user interface).

As to claim 2, Hartley discloses the method defined in claim 1, wherein said step of growing said region comprises an iterative series of steps, the steps comprising:

Evaluating an untested point in the image defining array adjacent to a boundary member point to determine if the untested point is a member of said region, said boundary member point

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being said seed point for a first iteration and said boundary member point being a member point at the boundary of said region for subsequent iterations (column 2, lines 12-35);

Adding to said region the untested points that are determined to be members of said region (column 2, lines 12-21 and column 3, lines 43-58);

Excluding from said region the untested points that are determined not to be members of said region (column 2, lines 12-21 and column 3, lines 43-58); and

Visually distinguishing, on the view of the image being displayed, the points determined to be members of said region from other points (column 3, lines 59-62),

Wherein the number of iterations performed is responsive to the user interface, such that manipulation of the user interface selectively determines the extent of the growth of said region (column 3, line 64 – column 4, line 14).

As to claim 3, Hartley discloses the method defined in claim 2, wherein said image is a three dimensional image, and wherein said image defining array is a three dimensional array (column 2, lines 6-11).

As to claim 4, Hartley discloses the method defined in claim 3, wherein a view of the image being displayed comprises a sectional view of said three dimensional image and the method further comprising the step, prior to step (a), of displaying said sectional view in response to user selection of a sectional plane through said three dimensional image, and wherein the user selects said sectional plane showing at least a substantial portion of said feature of interest (column 3, lines 66-67 and column 4, lines 6-9 and 15-25).

As to claim 5, Hartley discloses the method defined in claim 4, wherein said pixel selected by the user for determining a seed point comprises a pixel located within the feature of interest (column 4, lines 10-12).

As to claim 6, Hartley discloses the method defined in claim 4, wherein said step of visually distinguishing comprises blacking out the pixels in said sectional view corresponding to points in the image defining array determined to be member points of said region (column 4, lines 15-25)

As to claim 9, Hartley discloses the method defined in claim 4, wherein said portion of the image corresponding to said region substantially comprises said feature of interest (column 3, lines 66-67 and column 4, lines 6-9).

As to claim 15, Hartley discloses the method defined in claim 1, wherein said user interface comprises a device selected from the group comprising a keyboard, a mouse, a trackball, a touch pad, a microphone and a pen (column 4, line 6 and Fig. 1 element 5).

As to claim 16, Hartley discloses the method defined in claim 1, further comprising the step of displaying a view of the portion of the image corresponding to said region (column 3, lines 59-62).

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As to claim 17, Hartley discloses the method defined in claim 1, further comprising the step of displaying a view of a portion of the image corresponding to points outside said region (column 4, lines 15-25).

As to claim 18, please refer to the rejections made for claim 1 above.

As to claim 19, please refer to the rejections made for claim 3 above.

As to claim 20, please refer to the rejections made for claim 4 above.

As to claim 21, please refer to the rejections made for claim 6 above.

As to claim 27, please refer to the rejections made for claim 2 above.

As to claim 28, please refer to the rejections made for claim 1 above.

As to claim 29, please refer to the rejections made for claim 1 above.

***Allowable Subject Matter***

5. Claims 7, 8, 10-13 and 22-26 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

6. Claim 11 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

***Conclusion***

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

USPN 6,690,816 to Aylward et al. discloses a region growing process.

USPN 6,577,752 to Armato, III et al. discloses a region growing process.

USPN 6,453,069 to Matsugu et al. discloses a region growing process.

USPN 5,056,066 to Howard discloses a region growing process.

USPN 6,704,439 to Lee et al. discloses a region growing process.

USPN 6,694,163 to Vining discloses a region growing process.

USPN 6,606,091 to Liang et al. discloses a region growing process.

US Patent Pub. 2002/0090121 to Schneider et al. discloses a region growing process.

US Patent Pub. 2003/0068074 to Hahn discloses a region growing process.

US Patent Pub. 2003/0174872 to Chalana et al. discloses a region growing process.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Aaron W Carter whose telephone number is (703) 306-4060. The examiner can normally be reached on 7am - 3:30 am (Mon. - Fri.).


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bhavesh Mehta can be reached on (703) 308-5246. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.



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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
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